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STRUCTURE FILE UPDATES: 26 OCT 2008 HIGHEST RN 1066603-08-4
DICTIONARY FILE UPDATES: 26 OCT 2008 HIGHEST RN 1066603-08-4

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<http://www.cas.org/support/stngen/stdoc/properties.html>

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(FILE 'HOME' ENTERED AT 15:29:05 ON 27 OCT 2008)

FILE 'HCAPLUS' ENTERED AT 15:29:17 ON 27 OCT 2008
E US20060189788/PN
L1 1 S E3
SEL RN

FILE 'REGISTRY' ENTERED AT 15:30:20 ON 27 OCT 2008
L2 5 S E1-5

FILE 'REGISTRY' ENTERED AT 15:41:38 ON 27 OCT 2008
L3 95 S 37697-64-6/CRN

FILE 'REGISTRY' ENTERED AT 15:42:27 ON 27 OCT 2008
E TETRAFLUOROETHYLENE/CN
L4 1 S E3
E CHLOROTRIFLUOROETHYLENE/CN
L5 1 S E3
E HEXAFLUOROPROPYLENE/CN
L6 1 S E3
E VINYLIDENE FLUORIDE/CN
L7 1 S E3
E VINYL FLUORIDE/CN
L8 1 S E3
L9 5 S L4-8
L10 TRA L9 1- RN : 5 TERMS
L11 11098 SEA L10/CRN
L12 35 S L3 AND L11
L13 1 S L2 AND L12

FILE 'HCAPLUS' ENTERED AT 15:45:48 ON 27 OCT 2008

L14 999 S L12

FILE 'REGISTRY' ENTERED AT 15:46:43 ON 27 OCT 2008
L15 6 S L12 NOT NC>2

FILE 'HCAPLUS' ENTERED AT 15:47:15 ON 27 OCT 2008
L16 976 S L15
L17 QUE GLASS(W)TRANSITION(W)TEMPERATURE OR TG
L18 51 S L16 AND L17
L19 40 S L18 AND (PY<=2003 OR PRY<=2003 OR AY<=2003)

=> fil hcap
FILE 'HCAPLUS' ENTERED AT 15:50:42 ON 27 OCT 2008
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FILE COVERS 1907 - 27 Oct 2008 VOL 149 ISS 18
FILE LAST UPDATED: 26 Oct 2008 (20081026/ED)

HCaplus now includes complete International Patent Classification (IPC) reclassification data for the second quarter of 2008.

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d ibib abs hitstr hitind l19 1-40

L19 ANSWER 1 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:487863 HCAPLUS Full-text
DOCUMENT NUMBER: 143:34887
TITLE: Diphenylsulfide-containing polymers with low light transmission loss, good heat resistance, and high transmission band for optical components and plastic optical fibers
INVENTOR(S): Sasaki, Hiroki; Hatano, Seiji
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 21 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.

KIND DATE

APPLICATION NO.

DATE

JP 2005145861

A

20050609

JP 2003-383953

200311
13

PRIORITY APPLN. INFO.:

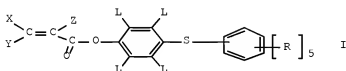
JP 2003-383953

200311
13

OTHER SOURCE(S):

MARPAT 143:34887

GI



AB Title polymers are obtained from diphenylsulfide compds. I, wherein X, Y = H, deuterium (D), or halogen; Z = H, D, Me, CD₃, CF₃, or halogen; and L, R = H, D, or substituent. Thus, 0.11 mol 4-mercaptophenol and 0.1 mol iodobenzene were reacted for 8 h, 0.05 mol of the resulting 4-phenylthiophenol was reacted with 0.055 mol acryloyl chloride to give 4-phenylthiophenoxy acrylate, which was mixed with Me methacrylate by varying composition, poured into a polymethyl methacrylate-coated KF 850 (polyvinylidene fluoride) tube with thickness 1 mm, inner diameter 22 mm, and length 30 cm, and polymerized at 80° while rotating the tube to give a hollow optical fiber preform with refractive index 1.420 in the cross section direction (clad part), 1.490 (outer core part), and 1.490 - 1.501 (inner core part), which was stretched at 220-260° to give an optical fiber with light transmission loss 190 dB/km at 650 nm, transmission band 1.8 GHz, and glass transition temperature (core) 120°.

IT 37626-13-4, Teflon AF 1600

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(cladding layer; preparation of di-Ph sulfide-containing polymers with low light transmission loss, good heat resistance, and high transmission band for optical components and plastic optical fibers)

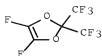
RN 37626-13-4 HCAPLUS

CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



IC ICM C07C323-20
ICS C08F020-38; G02B006-00

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38

IT 24937-79-9, KF 850 37626-13-4, Teflon AF 1600
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(cladding layer; preparation of di-Ph sulfide-containing polymers with low light transmission loss, good heat resistance, and high transmission band for optical components and plastic optical fibers)

L19 ANSWER 2 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:905800 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 141:386158
TITLE: Cyclic ether copolymer, coating resin composition, optical devices, and process for production of the devices
INVENTOR(S): Araki, Takayuki; Tanaka, Yoshito; Komatsu, Yuzo
PATENT ASSIGNEE(S): Daikin Industries, Ltd., Japan
SOURCE: PCT Int. Appl., 52 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004092235	A1	20041028	WO 2004-JP4613	20040331

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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, NG, SN, TD, TG

October 27, 2008

10/552,684

5

JP 3933180	B2	20070620	JP 2005-505357	200403 31
			<--	
US 20060189788	A1	20060824	US 2005-552684	200510 11
			<--	
PRIORITY APPLN. INFO.:			JP 2003-108365	A 200304 11
			<--	
			WO 2004-JP4613	W 200403 31
OTHER SOURCE(S):	MARPAT 141:386158			
GI				



AB The invention relates to a cyclic ether copolymer which is excellent in solvent solubility and can easily form thin films, i.e., a cyclic ether copolymer which is prepared from a compound having a 1,3-dioxole ring structure as I and an ethylenically unsatd. monomer and which is characterized by having a glass transition temperature of 100 to 135° and an intrinsic viscosity of 0.01 to 0.5 dL/g in perfluoro-2-butyltetrahydrofuran at 35°: wherein R1 and R2 are each independently F, H, Cl, or C1-5 perfluoroalkyl; X1 and X2 are each independently F, H, Cl, or -OR3; and R3 is C1-5 perfluoroalkyl, with the proviso that at least 1 of R1 and R2 is F or C1-5 perfluoroalkyl.

IT 37626-13-4, Perfluoro-2,2-dimethyl-1,3-dioxole-tetrafluoroethylene copolymer
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
 (cyclicether copolymer, and coating resin composition for fabricating optical devices)

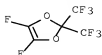
RN 37626-13-4 HCAPLUS

CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



IC ICM C08F234-02
 ICS B32B027-28; C09D145-00; B05D007-24; G02B006-00; G02B006-12;
 G02F001-361; H01S003-17

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 38, 42

IT 37626-13-4, Perfluoro-2,2-dimethyl-1,3-dioxole-tetrafluoroethylene copolymer
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
 (cyclic ether copolymer, and coating resin composition for fabricating optical devices)

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L19 ANSWER 3 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2003:772707 HCAPLUS [Full-text](#)
 DOCUMENT NUMBER: 139:396436
 TITLE: Sorption and Transport in Poly(2,2-bis(trifluoromethyl)-4,5-difluoro-1,3-dioxole-co-tetrafluoroethylene) Containing Nanoscale Fumed Silica

AUTHOR(S): Merkel, Timothy C.; He, Zhenjie; Pinnau, Ingo; Freeman, Benny D.; Meakin, Pavla; Hill, Anita J.

CORPORATE SOURCE: Membrane Technology and Research, Menlo Park, CA, 94025-1516, USA

SOURCE: Macromolecules (2003), 36(22), 8406-8414
 CODEN: MAMOBX; ISSN: 0024-9297

PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The addition of nanoscale, nonporous fumed silica (FS) particles to size-selective poly(2,2-bis(trifluoromethyl)-4,5-difluoro-1,3-dioxole-co-tetrafluoroethylene) (AF2400) systematically increases penetrant permeability coeffs., similar to behavior previously observed in vapor-selective polyacetylenes, but contrary to results in traditional filled polymer systems. Permeability coeffs. of large penetrants increase more than those of small mols. in filled AF2400, thereby decreasing the size selectivity of this

polymer. AF2400 is readily plasticized by n-butane, whereas AF2400 containing 40 wt % FS exhibits antiplasticization behavior, suggesting that filler addition alters AF2400 to allow n-butane mols. to be accommodated in the polymer without significant swelling and subsequent plasticization of the matrix. Both filled and unfilled AF2400 have essentially the same gas solubility coeffs., so all of the increase in penetrant permeability in filled AF2400 is a result of increased diffusion coeffs. There is reasonable agreement between diffusion coeffs. obtained from transient sorption and steady-state data, both of which increase regularly with increasing FS content. Positron annihilation lifetime spectroscopy reveals that FS addition increases the size of free volume elements in AF2400. Thermal anal. of filled AF2400 shows that FS has no detectable effect on the polymer's glass transition temperature, indicating that FS has little impact on long-range chain mobility.

IT 37626-13-4, Teflon AF 2400

RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(sorption and transport in
poly(2,2-bis(trifluoromethyl)-4,5-difluoro-1,3-dioxole-co-
tetrafluoroethylene) containing nanoscale fumed silica)

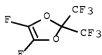
RN 37626-13-4 HCAPLUS

CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with
1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



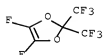
CC 37-5 (Plastics Manufacture and Processing)

IT 37626-13-4, Teflon AF 2400

RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(sorption and transport in
poly(2,2-bis(trifluoromethyl)-4,5-difluoro-1,3-dioxole-co-
tetrafluoroethylene) containing nanoscale fumed silica)

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

ACCESSION NUMBER: 2003:674516 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 139:308057
TITLE: Copolymerization of Tetrafluoroethylene and
2,2-Bis(trifluoromethyl)-4,5-difluoro-1,3-dioxol
e in Supercritical Carbon Dioxide
AUTHOR(S): Michel, U.; Resnick, P.; Kipp, B.; DeSimone, J.
M.
CORPORATE SOURCE: Department of Chemistry, Venable and Kenan
Laboratories, University of North Carolina,
Chapel Hill, NC, 27599-3290, USA
SOURCE: Macromolecules (2003), 36(19),
7107-7113
CODEN: MAMOBX; ISSN: 0024-9297
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Copolymers of tetrafluoroethylene (TFE) and 2,2-bis(trifluoromethyl)-4,5-
difluoro-1,3-dioxole (PDD) were synthesized in carbon dioxide at low temps.
Bis(perfluoro-2-N-propoxypropionyl) peroxide was used as initiator. A range of
copolymers with various compns. and different mol. wts. was prepared in yields
as high as 74%. The glass transition temperature of the copolymers increased
with increasing PDD content and ranged from 67 to 334 °C for the PDD
homopolymer. The phase behavior was found to depend on the feed composition
A comparison of a fully fluorinated com. available product with a sample
synthesized in carbon dioxide (without post-fluorination procedures) to match
the composition and the mol. weight of the com. sample showed no significant
difference using IR spectroscopy, NMR spectroscopy, and differential scanning
calorimetry, indicating similar microstructures. A simple method to determine
the copolymer composition based on IR spectroscopy was developed.
IT 37626-13-4P, 2,2-Bis(trifluoromethyl)-4,5-difluoro-1,3-
dioxole-tetrafluoroethylene copolymer
RL: PRP (Properties); SPN (Synthetic preparation); PREP
(Preparation)
(copolymn. of tetrafluoroethylene and
bis(trifluoromethyl)difluorodioxole in supercrit. carbon dioxide)
RN 37626-13-4 HCAPLUS
CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with
1,1,2,2-tetrafluoroethene (CA INDEX NAME)
CM 1
CRN 37697-64-6
CMF C5 F8 O2



CM 2
CRN 116-14-3
CMF C2 F4



CC 35-4 (Chemistry of Synthetic High Polymers)
 IT Glass transition temperature
 Polymerization
 (copolymn. of tetrafluoroethylene and
 bis(trifluoromethyl)difluorodioxole in supercrit. carbon dioxide)
 IT 37626-13-4P, 2,2-Bis(trifluoromethyl)-4,5-difluoro-1,3-
 dioxole-tetrafluoroethylene copolymer 37685-92-0P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP
 (Preparation)
 (copolymn. of tetrafluoroethylene and
 bis(trifluoromethyl)difluorodioxole in supercrit. carbon dioxide)
 REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

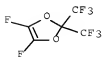
L19 ANSWER 5 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2003:551814 HCAPLUS Full-text
 DOCUMENT NUMBER: 139:103795
 TITLE: Process for fabrication of gas diffusion backing
 for fuel cells
 INVENTOR(S): Barton, Kelly; Banerjee, Shoibal
 PATENT ASSIGNEE(S): E. I. Du Pont de Nemours & Co., USA
 SOURCE: PCT Int. Appl., 33 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2003058743	A2	20030717	WO 2002-US40334	20021218

WO	2003058743	A3	20040930	
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UD, UG, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
US	20030157397	A1	20030821	US 2002-308290
				2002102

US 6733915	B2	20040511		
CA 2470540	A1	20030717	CA 2002-2470540	200212

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 AU 2002357288 A1 20030724 AU 2002-357288 200212
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 EP 1485964 A2 20041215 EP 2002-806170 200212
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 PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK
 CN 1608331 A 20050420 CN 2002-826286 200212
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 JP 2005514747 T 20050519 JP 2003-558951 200212
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 PRIORITY APPLN. INFO.: US 2001-343845P P 200112
 27
 <--
 WO 2002-US40334 W 200212
 18
 <--
 AB The invention concerns a gas diffusion backing for fuel cells wherein a porous
 carbonaceous paper or fabric, impregnated with a first fluorinated polymer,
 bears a microporous coating of a second fluorinated polymer admixed with
 carbon particles. Also, a process for making the composite wherein the
 fluorinated polymers are coalesced by heating above their glass transition
 temperature or m.p. is described. A membrane electrode assembly prepared
 using these gas diffusion backing and a fuel are also provided.
 IT 37626-13-4, 2,2-Bistrifluoromethyl-4,5-difluoro-1,3-dioxole-
 tetrafluoroethylene copolymer
 RL: TEM (Technical or engineered material use); USES (Uses)
 (coating; process for fabrication of gas diffusion backing for
 fuel cells)
 RN 37626-13-4 HCAPLUS
 CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with
 1,1,2,2-tetrafluoroethene (CA INDEX NAME)
 CM 1
 CRN 37697-64-6
 CMF C5 F8 O2



CRN 116-14-3
CMF C2 F4



IC ICM H01M008-10
ICS H01M004-86; H01M004-88; H01M004-96
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
IT Fuel cell electrodes
Glass transition temperature
Plasticizers
(process for fabrication of gas diffusion backing for fuel cells)
IT 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer
25190-89-0, Hexafluoropropylene-Tetrafluoroethylene-vinylidene
fluoride copolymer 25684-76-8, Tetrafluoroethylene-vinylidene
fluoride copolymer 37626-13-4,
2,2-Bistrifluoromethyl-4,5-difluoro-1,3-dioxole-tetrafluoroethylene
copolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(coating; process for fabrication of gas diffusion backing for
fuel cells)

L19 ANSWER 6 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:539489 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 139:382287

TITLE: Etching rate and structural modification of
polymer films during low energy ion irradiation
AUTHOR(S): Zaporozhchenko, V.; Zekonyte, J.; Erichsen, J.;
Faupel, F.

CORPORATE SOURCE: Technical Faculty, Chair for Multicomponent
Materials, Kiel University, Kiel, 24143, Germany
SOURCE: Nuclear Instruments & Methods in Physics
Research, Section B: Beam Interactions with
Materials and Atoms (2003), 208,
155-160

CODEN: NIMBEU; ISSN: 0168-583X

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Various polymers were sputtered with low energy Ar⁺ ions of 1 keV in order to
determine their etching rate. Hydrocarbons, oxygenated, fluorinated and
nitrogen-containing glassy polymers with a broad range of the glass transition
temperature (T_g) were chosen. The etching rate was measured using a
profilometer, and XPS. At the same time the surface chemical modification,
and the surface glass transition temperature were studied. Comparing the
sputter rate to the various polymer properties a correlation among the T_g,
cross-link d., and sputter rate was found. In addition, the sputter rate as a
function of the integral ion fluence proved to exhibit a sharp increase in the
initial regime of very low fluence. The results are discussed in terms of the
characteristics of the polymers.

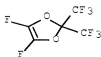
IT 37626-13-4, Teflon AF

RL: PEP (Physical, engineering or chemical process); PYP (Physical
process); PROC (Process)
(etching rate and structural modification of polymer films during
low energy ion irradiation)

RN 37626-13-4 HCAPLUS
CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with
1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6
CMF C5 F8 O2



CM 2

CRN 116-14-3
CMF C2 F4



CC 38-2 (Plastics Fabrication and Uses)
IT 9003-07-0, Polypropylene 9003-53-6, Polystyrene 9011-14-7, PMMA
25014-31-7, Poly(α -methylstyrene) 25036-53-7
37626-13-4, Teflon AF
RL: PEP (Physical, engineering or chemical process); PYP (Physical
process); PROC (Process)
(etching rate and structural modification of polymer films during
low energy ion irradiation)
REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L19 ANSWER 7 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:860671 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 136:238939
TITLE: Materials design and development of
fluoropolymers for use as pellicles in 157-nm
photolithography
AUTHOR(S): French, Roger H.; Gordon, Joseph S.; Jones,
David J.; Lemon, M. F.; Wheland, Robert C.;
Zhang, Xun; Zumsteg, Fredrick C., Jr.; Sharp,
Kenneth G.; Qiu, Weiming
CORPORATE SOURCE: Central Research, E. I. Du Pont de Nemours and
Co., Wilmington, DE, 19880-0356, USA
SOURCE: Proceedings of SPIE-The International Society
for Optical Engineering (2001),
4346(Pt. 1, Optical Microlithography XIV), 89-97
CODEN: PSISDG; ISSN: 0277-786X
PUBLISHER: SPIE-The International Society for Optical
Engineering

DOCUMENT TYPE:

Journal

LANGUAGE:

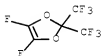
English

- AB The introduction of 157 nm as the next optical lithog. wavelength has created a need for new soft (polymeric) or hard (quartz) pellicle materials optimized for this wavelength. Materials design and development of ultra transparent fluoropolymers suitable for 157 nm soft pellicle applications has produced a number of promising candidate materials with absorbances below 0.03/ μm as is necessary to achieve pellicle transmissions above 95%. The authors developed 12 families of exptl. TeflonAF (TAFx) materials which have sufficient transparency to produce transmissions >95%. For the successful fabrication of 157 nm pellicles from these materials, the fluoropolymers must have appropriate phys. properties to permit the spin coating of thin polymer films and their lifting and adhesive mounting to pellicle frames, the processes which produce free standing pellicle membranes of micron scale thickness. Relevant phys. properties include mol. weight, glass transition temperature, and mech. strength and toughness. The authors successfully developed various of the ultra transparent TAFx polymer families with these phys. properties. Upon irradiation these 157 nm pellicle polymers undergo photochem. darkening, which reduces the 157 nm transmission of the material. Measurements of the photochem. darkening rate allow the estimation of the pellicle lifetime corresponding to a 10% drop in 157 nm transmission. Increasing the 157 nm lifetime of fluoropolymers involves simultaneous optimization of the materials, the pellicle and the end use. Similar optimization was essential to achieve the desired radiation durability lifetimes for pellicles successfully developed for use with KrF (248 nm) and ArF (193 nm) lithog.
- IT 37626-13-4E, Teflon AF, derivs.
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(materials design and development of fluoropolymers for use as pellicles in vacuum-UV lithog. photomasks)
- RN 37626-13-4 HCAPLUS
- CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 37626-13-4B, Teflon AF, derivs.
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(materials design and development of fluoropolymers for use as pellicles in vacuum-UV lithog. photomasks)
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L19 ANSWER 8 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:830910 HCAPLUS Full-text
DOCUMENT NUMBER: 135:372666
TITLE: Process of separating a fluid mixture by a polymer membrane containing filler
INVENTOR(S): Pinnau, Ingo; He, Zhenjie
PATENT ASSIGNEE(S): Membrane Technology and Research, Inc., USA
SOURCE: U.S., 17 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 6316684	B1	20011113	US 1999-387802	19990901
			<--	
PRIORITY APPLN. INFO.:			US 1999-387802	19990901

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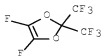
AB A membrane and membrane separation process useful in gas, vapor and liquid sepns. The membrane comprises a separating layer of a polymer that is characterized by a high glass transition temperature, T_g, such as at least about 100°, and a high free volume within the polymer material itself, such as a fractional free volume of at least about 0.20. Within the polymer material are dispersed fine non-porous particles, such as silica or carbon black particles, having an average diameter no greater than about 1,000 Å. The membrane is particularly useful for separating C₃+ hydrocarbons from other gases.

IT 37626-13-4, Teflon AF 2400
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(process of separating a fluid mixture by a polymer membrane containing filler)

RN 37626-13-4 HCAPLUS
CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6
CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



IC ICM C07C007-144

ICS B01D065-00; B01D039-14; B01D039-00

INCL 585818000

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 23

IT 25067-58-7D, Polyacetylene, substituted derivs. 37626-13-4

, Teflon AF 2400 82695-07-6, Poly(4-methyl-2-pentyne)

87842-32-8, Poly(1-trimethylsilyl-1-propyne)

RL: PEP (Physical, engineering or chemical process); PRP

(Properties); TEM (Technical or engineered material use); PROC

(Process); USES (Uses)

(process of separating a fluid mixture by a polymer membrane containing filler)

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L19 ANSWER 9 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:288213 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 135:61706

TITLE: Investigation of the Mercat Reaction as a Tool
for the Introduction of Nitrogen Surface
Functionality on Linear Low-Density Polyethylene
(LLDPE) and Polypropylene (PP)

AUTHOR(S): Dhamodharan, R.; Nisha, A.; Pushkala, K.;
McCarthy, Thomas J.

CORPORATE SOURCE: Department of Chemistry, Indian Institute of
Technology, Madras Chennai, 600 036, India

SOURCE: Langmuir (2001), 17(11), 3368-3374

CODEN: LANGD5; ISSN: 0743-7463

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Mercury photosensitized chemical reaction in the presence of aqueous ammonia (NH₄OH) is a simple and versatile method of introducing polar surface functionalities comprising nitrogen and oxygen on polyolefins such as linear low-d. polyethylene (LLDPE) and polypropylene (PP). Thus, nitrogen and oxygen surface functionalities are introduced in a surface selective manner on LLDPE and PP to give a relatively hydrophilic surface as revealed by XPS, ATR-IR,

and water contact angle analyses. XPS, water contact angle, ATR-IR, and SEM are used to characterize the modified surfaces. Preliminary investigations also reveal that surface selective functionalization of a wide variety of polymers such as PET, Teflon-AF, PTFE, and fluoroethylene-propylene copolymer (FEP) can be performed by this simple method of surface modification. Thus, it is observed that crystallinity and segmental mobility as exemplified by glass transition temperature could be important factors in polymer surface modification besides inherent reactivity based on chemical structure alone. A model of the modified surface consistent with the surface characterization data is proposed.

IT 37626-13-4DP, Teflon AF, nitrogen surface functionalized

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(mercury photosensitized surface modification of polymers in presence of aqueous ammonia)

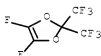
RN 37626-13-4 HCAPLUS

CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



CC 35-8 (Chemistry of Synthetic High Polymers)

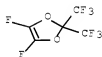
IT 9002-84-0DP, PTFE, nitrogen surface functionalized 25038-59-9DP, Poly(ethylene terephthalate), nitrogen surface functionalized 26794-60-5DP, Fluoroethylene-propylene copolymer, nitrogen surface functionalized 37626-13-4DP, Teflon AF, nitrogen surface functionalized

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(mercury photosensitized surface modification of polymers in presence of aqueous ammonia)

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ACCESSION NUMBER: 2000:868788 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 134:121361
TITLE: Controlled nucleation and growth of noble metals on polymers
AUTHOR(S): Zaporojtchenko, Vladimir; Strunskus, Thomas; Behnke, Knut; Faupel, Franz
CORPORATE SOURCE: Lehrstuhl für Materialverbunde, Technische Fakultät der Christian-Albrechts-Universität zu Kiel, Kiel, Germany
SOURCE: EUROMAT 99, Biannual Meeting of the Federation of European Materials Societies (FEMS), Munich, Germany, Sept. 27-30, 1999 (2000), Meeting Date 1999, Volume 9, 24-29. Editor(s): Ruehle, M.; Gleiter, H. Wiley-VCH Verlag GmbH: Weinheim, Germany.
CODEN: 69AMNI
DOCUMENT TYPE: Conference
LANGUAGE: English
AB The nucleation and growth of noble metals (Cu, Ag, and Au) onto fully cured polymer films with different composition was investigated. The effect of metal-polymer interaction as well as the deposition parameters and surface treatment on the nucleation process was analyzed. Three polymers were used: pyromellitic dianhydride-oxydianiline polyimide, bisphenol-trimethyl cyclohexane polycarbonate, and Teflon AF. All polymers were cured before deposition of metals. Cluster densities for room and elevated temperature deposition were determined. The interaction between polymer surface and deposited metals is discussed with respect to the morphol. of the metal-polymer interface. By deposition and temperature treatment (at a temperature near the glass transition temperature of the polymer), redistribution (embedding) of the clusters into the polymer was observed
IT 37626-13-4, Teflon AF
RL: PRP (Properties)
(nucleation and growth of noble metals on polymers)
RN 37626-13-4 HCAPLUS
CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)
CM 1
CRN 37697-64-6
CMF C5 F8 O2



CM 2
CRN 116-14-3
CMF C2 F4



CC 66-3 (Surface Chemistry and Colloids)
 Section cross-reference(s): 36, 56
 IT 25036-53-7, PMDA-ODA 37626-13-4, Teflon AF 129510-27-6
 138005-52-4
 RL: PRP (Properties)
 (nucleation and growth of noble metals on polymers)
 REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR
 THIS RECORD. ALL CITATIONS AVAILABLE IN
 THE RE FORMAT

L19 ANSWER 11 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2000:752871 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 134:17954

TITLE: Solubility of vinylidene fluoride polymers in
 supercritical CO2 and halogenated solvents
 AUTHOR(S): Dinioia, Todd P.; Conway, Shawn E.; Lim, Jong
 Sung; McHugh, Mark A.

CORPORATE SOURCE: Department of Chemical Engineering, Johns
 Hopkins University, Baltimore, MD, 21218, USA

SOURCE: Journal of Polymer Science, Part B: Polymer
 Physics (2000), 38(21), 2832-2840
 CODEN: JPBPEM; ISSN: 0887-6266

PUBLISHER: John Wiley & Sons, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The cloud-point behavior of PVDF and poly(vinylidene fluoride-co-
 hexafluoropropylene) (VDF-HFP) are reported at ≤250° and ≤3000 bar in
 supercrit. CO2, CHF3, CH2F2, CHClF2, CClF3, CH3CHF2, CH2FCF3, CHF2CF3, and
 CH3CClF2. The PVDF mol. weight has a smaller effect on the cloud point than
 the solvent quality. Cloud-point pressures for both fluoropolymers decrease
 as the solvent polarizability, polar moment per molar volume, and d.
 increases. However, it is extremely difficult to dissolve either
 fluoropolymer in CClF3, which has a large polarizability and a small dipole
 moment. CO2 is an effective solvent because it complexes with the C-F dipole
 at low temps. where energetic interactions fix the phase behavior. In
 addition, polymer architecture has a strong impact on the cloud-point
 pressure. VDF-HFP has lower cloud-point pressures than PVDF in all solvents
 because it has a larger free volume that promotes facile interactions between
 the solvent and the polymer segments. Cloud-point data also are reported for
 amorphous poly(tetrafluoroethylene-co-2,2-bis(trifluoromethyl)-4,5-difluoro-
 1,3-dioxole) in supercrit. CO2. These data provide an interesting comparison
 because of very high Tg.

IT 37626-13-4, 2,2-Bis(trifluoromethyl)-4,5-difluoro-1,3-
 dioxole-tetrafluoroethylene copolymer

RL: PRP (Properties)
 (solubility in supercrit. CO2)

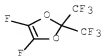
RN 37626-13-4 HCAPLUS

CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with
 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



CC 36-5 (Physical Properties of Synthetic High Polymers)

IT 37626-13-4, 2,2-Bis(trifluoromethyl)-4,5-difluoro-1,3-dioxole-tetrafluoroethylene copolymer

RL: PRP (Properties)
(solubility in supercrit. CO2)REFERENCE COUNT: 47 THERE ARE 47 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L19 ANSWER 12 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2000:442023 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 133:79405

TITLE: Contact lens articles made from perfluorinated
comonomers

INVENTOR(S): Salamone, Joseph C.; Bonafini, James A. Jr.

PATENT ASSIGNEE(S): Bausch & Lomb Incorporated, USA

SOURCE: PCT Int. Appl., 22 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000037971	A1	20000629	WO 1999-US28144	19991129

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RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 1998-220002 A

199812

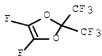
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- AB A rigid, gas-permeable, high-Dk fluoro polymeric contact lens article, including both contact lenses and buttons from which contact lenses is disclosed. The contact lens article comprises copolymers of certain perfluorinated heterocyclic comonomeric units that provide an improved balance of properties, including high oxygen-transmissibility, necessary for extended-wear or specialty lenses. Such copolymers are sufficiently rigid for normal lathing and economic manufacture. The contact lenses are biocompatible when surface-treated. Molded rods of the material were made from Teflon AF 1600, comprising 65% perfluoro-2,2-dimethyl-1,3-dioxole and 45% tetrafluoroethylene. The rods' dimensions were 12.7 mm diameter and 4 mm thick. Buttons were cut from the rods and lathed into contact lenses. The properties of the lenses such as Rockwell hardness, O permeability, and flexural modulus were determined
- IT 37626-13-4, Teflon AF 1600
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
 (contact lens articles based on perfluorinated comonomers)
- RN 37626-13-4 HCAPLUS
- CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



- IC ICM G02B001-04
- CC 63-7 (Pharmaceuticals)
- IT Bending strength
 Biocompatibility
 Contact lenses
 Glass transition temperature
 Hardness (mechanical)
 Plasma
 (contact lens articles based on perfluorinated comonomers)
- IT 37626-13-4, Teflon AF 1600

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(contact lens articles based on perfluorinated comonomers)

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L19 ANSWER 13 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2000:97466 HCAPLUS Full-text

DOCUMENT NUMBER: 132:223493

TITLE: Metal/polymer interfaces with designed morphologies

AUTHOR(S): Zaporozhchenko, V.; Strunskus, T.; Behnke, K.; Von Bechtolsheim, C.; Kiene, M.; Faupel, F.

CORPORATE SOURCE: Lehrstuhl für Materialverbunde, Lehrstuhl für Materialverbunde, Technische Fakultät der Christian-Albrechts-Universität zu Kiel, Kiel, D-24143, Germany

SOURCE: Journal of Adhesion Science and Technology (2000), 14(3), 467-490

CODEN: JATEE8; ISSN: 0169-4243

PUBLISHER: VSP BV

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The morphol. of a metal/polymer interface is important for many properties, e.g. its adhesional strength. Starting from the basic processes occurring in the initial stages of metal/polymer interface formation, it is possible to obtain different morphologies by variation of the preparation conditions. In this report we present selected examples from our own work of how metal/polymer interfaces with different morphologies can be prepared by evaporating noble metals (Au, Ag, Cu) onto chemical different polymers, i.e. bisphenol-trimethyl cyclohexane polycarbonate (TMC-PC), pyromellitic dianhydride-oxydianiline (PMDA-ODA) polyimide (PI), and on Teflon AF 1601. The interfaces were characterized using transmission electron microscopy (TEM), XPS (XPS), and atomic force microscopy (AFM). The combination of these techniques allows one to determine morphol. parameters such as the concentration and distribution of metal clusters at the surface and in the near-surface region. Using low deposition rates and elevated temps., spread-out metal/polymer interfaces can be formed, whereas the use of high deposition rates and moderate temps. results in relatively sharp interfaces. Another approach to obtain a defined morphol. is to form large metal clusters of 10-30 nm diameter on the polymer surface and embed them into the polymer in a controlled manner by a subsequent annealing process. First expts. on the macroscopic adhesion of Au and Cu on TMC-PC showed that the initially low peel strength could be increased substantially by subsequent annealing above the glass transition temperature

IT 37626-13-4, Teflon AF 1601

RL: PRP (Properties)

(characteristics of metal/polymer interfaces with designed morphol.)

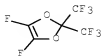
RN 37626-13-4 HCAPLUS

CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 37

IT Glass transition temperature

Interface

Polymer morphology

(characteristics of metal/polymer interfaces with designed morphol.)

IT 7440-22-4, Silver, properties 7440-50-8, Copper, properties

7440-57-5, Gold, properties 25036-53-7,

4,4'-Oxydianiline-pyromellitic dianhydride copolymer, SRU

25038-81-7, 4,4'-Oxydianiline-pyromellitic dianhydride copolymer

37626-13-4, Teflon AF 1601 129510-27-6, Carbonic

acid-4,4'-(3,3,5-trimethylcyclohexylidene)bisphenol copolymer, sru

138005-52-4, Carbonic acid-4,4'-(3,3,5-

trimethylcyclohexylidene)bisphenol copolymer

RL: PRP (Properties)

(characteristics of metal/polymer interfaces with designed morphol.)

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L19 ANSWER 14 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2000:34928 HCAPLUS Full-text

DOCUMENT NUMBER: 132:94176

TITLE: Fluorohydrocarbon solvents for amorphous fluoropolymers

INVENTOR(S): Hrivnak, Jeffrey A.; Mahler, Walter; O'Brien,
William George; Petrov, Viacheslav
Alexandrovich; Wheland, Robert Clayton

PATENT ASSIGNEE(S): E. I. Du Pont de Nemours & Co., USA

SOURCE: PCT Int. Appl., 20 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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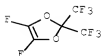
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WO 2000001758      A1      20000113      WO 1999-US14931
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    HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK,
    MN, MX, NO, NZ, PL, RO, SG, SI, SK, TJ, TR, TT, UA, UZ, VN,
    YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE,
    DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,
    CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
US 6248823          B1      20010619      US 1999-338149
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CA 2335802          A1      20000113      CA 1999-2335802
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AU 9948517          A      20000124      AU 1999-48517
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EP 1093485          A1      20010425      EP 1999-932149
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EP 1093485          B1      20021218
R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
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JP 2002519493       T      20020702      JP 2000-558156
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PRIORITY APPLN. INFO.:      US 1998-91494P      P
                                                    199807
                                                    02
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WO 1999-US14931      W
                                                    199907
                                                    01
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AB  A liquid/gelatinous composition of matter comprises: (a) a solvent or a
    mixture of solvents selected from the group consisting of: (i) a CnF2n+2-xHx
    compound, wherein n is an integer from 6 to 15 and x is an integer from 1 to
    3; (ii) a CmF2m-yHy compound, wherein m is an integer from 7 to 15 and y is an
    integer from 1 to 3; and (b) one or more specified amorphous fluoropolymer
    wherein the amorphous fluoropolymer has no detectable Tg (< 1 J/g) by
    differential scanning calorimetry and wherein the amorphous fluoropolymer
    makes up 0.05 to 30 wt % of the composition and wherein at least 5% of the
    amorphous fluoropolymer present is in solution in the solvent or mixture of
    solvents.
IT  37626-13-4
RL: PRP (Properties)
    (fluorohydrocarbon solvents for amorphous fluoropolymers)
RN  37626-13-4      HCAPLUS
CN  1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with
    1,1,2,2-tetrafluoroethene (CA INDEX NAME)

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CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



IC ICM C08J003-09

ICS C08K005-02; C08L027-18

CC 37-6 (Plastics Manufacture and Processing)

IT 25067-11-2, Hexafluoropropene tetrafluoroethylene copolymer

26425-79-6, Perfluoro(methyl vinyl ether) tetrafluoroethylene

copolymer 26654-97-7 37626-13-4 57578-63-9,

Perfluorovinylether tetrafluoroethylene copolymer 204270-08-6,

Perfluoro(ethyl vinyl ether) perfluoro(methyl vinyl ether)

tetrafluoroethylene copolymer

RL: PRP (Properties)

(fluorohydrocarbon solvents for amorphous fluoropolymers)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN
THE RE FORMAT

L19 ANSWER 15 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2000:10262 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 132:223451

TITLE: Formation of metal-polymer interfaces by metal
evaporation: influence of deposition parameters
and defects

AUTHOR(S): Zaporojtchenko, V.; Strunskus, T.; Behnke, K.;
v. Bechtolsheim, C.; Thran, A.; Faupel, F.

CORPORATE SOURCE: Technische Fakultat der CAU Kiel, Lehrstuhl fur
Materialverbunde, Kiel, 24143, Germany

SOURCE: Microelectronic Engineering (2000),
50(1-4), 465-471

CODEN: MIENEF; ISSN: 0167-9317

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Metal-polymer interfaces with different but well defined morphologies were
prepared by evaporating noble metals (Au, Ag, Cu) onto chemical different

polymers, i.e. bisphenol-trimethyl cyclohexane polycarbonate (TMC-PC), pyromellitic dianhydride-oxydianiline (PMDA-ODA) polyimide (PI), polystyrene (PS) and the low-k dielec. Teflon AF 1601. The interfaces were characterized using transmission electron microscopy (TEM), XPS (XPS) and atomic force microscopy (AFM). The combination of these techniques allowed one to determine morphol. parameters such as concentration and distribution of metal clusters at the surface and in the near-surface region. In addition, radiotracer measurements yielded exact metal condensation coeffs. C and was used to determine the extent of diffusion of metal atoms into the polymers. First expts. on the macroscopic adhesion of Cu on TMC-PC showed that the initially low peel strength can be increased substantially by subsequent annealing above the polymer glass transition temperature, T_g .

IT 37626-13-4, Teflon AF 1601

RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(effect of deposition parameters and defects on the formation of metal-polymer interfaces by metal evaporation)

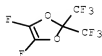
RN 37626-13-4 HCAPLUS

CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



CC 38-2 (Plastics Fabrication and Uses)

Section cross-reference(s): 37

IT Condensation (physical)

Glass transition temperature

Polymer morphology

Solid-solid interface

(effect of deposition parameters and defects on the formation of metal-polymer interfaces by metal evaporation)

IT 7440-22-4, Silver, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 9003-53-6, Polystyrene 9043-05-4, 4,4'-Oxydianiline-pyromellitic dianhydride copolymer, SRU 25038-81-7, 4,4'-Oxydianiline-pyromellitic dianhydride copolymer

37626-13-4, Teflon AF 1601 129510-27-6, Carbonic acid-4,4'-(3,3,5-trimethylcyclohexylidene)bisphenol copolymer, srul 138005-52-4, Carbonic acid-4,4'-(3,3,5-trimethylcyclohexylidene)bisphenol copolymer
RL: PRP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(effect of deposition parameters and defects on the formation of metal-polymer interfaces by metal evaporation)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L19 ANSWER 16 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:660326 HCAPLUS Full-text

DOCUMENT NUMBER: 132:23554

TITLE: A study on a perfluoropolymer purification and its application to membrane formation
AUTHOR(S): Arcella, V.; Colaianna, P.; Maccone, P.; Sanguinetti, A.; Gordano, A.; Clarizia, G.; Drioli, E.

CORPORATE SOURCE: Ausimont S.p.A. CRS, Bollate, 20021, Italy

SOURCE: Journal of Membrane Science (1999), 163(2), 203-209
CODEN: JMESDO; ISSN: 0376-7388

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Copolymers of tetrafluoroethylene (TFE) and 2,2,4-trifluoro, 5-trifluoromethoxy-1,3-dioxole (TTD), known com. as HYFLON AD, are highly transparent to light from deep UV to near IR, so they find applications in optic and electronic industries, such as plastic optical fibers (POF), anti-reflective coating and protective pellicles in manufacturing semi-conductor. For the above application, it is often crucial to avoid the presence of both suspended and dissolved contaminants in the polymer and polymeric solns. Membranes made from this amorphous perfluoropolymer were prepared in flat sheet, tubular and hollow fiber forms. Tests of membrane hydrophobic character and of pure gas permeability were carried out. Exptl. gas separation data obtained with membranes prepared with TTD-TFE co-polymers and data from the literature on membranes made with co-polymers of perfluoro-2,2-dimethyldioxole (PDD) and TFE, com. known as TEFLON AF, revealed an interesting linear relationship between permeation and glass transition temperature T_g . The voids volume fraction (Φ_v) of the above amorphous perfluoropolymers was also estimated from the difference between the exptl. polymer d and a theor. d obtained by simple calcns. using the group contribution method.

IT 37626-13-4, TEFLON AF

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(perfluoropolymer purification and its application to membrane formation)

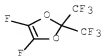
RN 37626-13-4 HCAPLUS

CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



CC 38-3 (Plastics Fabrication and Uses)

IT 37626-13-4, TEFLON AF

RL: PRP (Properties); TEM (Technical or engineered material use);

USES (Uses)

(perfluoropolymer purification and its application to membrane formation)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L19 ANSWER 17 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:242004 HCAPLUS Full-text

DOCUMENT NUMBER: 130:282872

TITLE: Graded-refractive-index optical plastic material

INVENTOR(S): Sugiyama, Norihide; Murofushi, Hidenobu; Okazoe,

Takashi; Tamura, Masayuki; Tatematsu, Shin;

Irisawa, Jun

PATENT ASSIGNEE(S): Asahi Glass Company Ltd., Japan

SOURCE: Eur. Pat. Appl., 17 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 907088	A2	19990407	EP 1998-118582	19981001
EP 907088	A3	20000419		
EP 907088	B1	20030102		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 11167030	A	19990622	JP 1998-268669	19980922

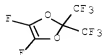
					<--	
JP 4132282	B2	20080813				
CN 1213677	A	19990414	CN 1998-120893			199809 29
					<--	
CN 1112594	C	20030625				
TW 394859	B	20000621	TW 1998-87116271			199809 30
					<--	
CA 2249161	A1	19990402	CA 1998-2249161			199810 01
					<--	
US 6166125	A	20001226	US 1998-164371			199810 01
					<--	
AT 230496	T	20030115	AT 1998-118582			199810 01
					<--	
ES 2190026	T3	20030716	ES 1998-118582			199810 01
					<--	
PRIORITY APPLN. INFO.:			JP 1997-270122	A		199710 02
					<--	
AB	A graded-refractive-index optical plastic material, useful for optical fibers, comprises an amorphous F-containing polymer (A) having substantially no C-H bonds and ≥ 1 F-containing polycyclic compound (B) having a refractive index higher by ≥ 0.005 than A, where B is distributed in A such that the concentration decreases from the center to the periphery; B is selected from among the following: (1) a noncondensed polycyclic compound having ≥ 2 F-containing carbon or heterocyclic rings bonded by a triazine ring, an O atom, a S atom, a P atom, or a metal atom, each of the rings bearing a F atom or a perfluoroalkyl group, the polycyclic compound having substantially no C-H bonds; (2) a noncondensed polycyclic compound having ≥ 3 carbon or heterocyclic rings bonded directly or by a bond containing a carbon atom, each of the rings bearing a F atom or a perfluoroalkyl group, the polycyclic compound having substantially no C-H bonds; or (3) a condensed polycyclic compound composed of ≥ 3 carbon or heterocyclic rings and having substantially no C-H bonds. Thus, perfluoro(butenyl vinyl ether) was polymerized in aqueous MeOH to give a polymer (I) with T_g 108° and refractive index 1.342. A solution of 7% Sn(C6F5)4 in I was melt-molded at 250° to form a cylindrical rod with refractive index 1.357, which was inserted in a I cylindrical tube and the combination heated to 200° to give a preform, which was melt-spun at 230° to obtain an optical fiber with loss ranging from 200 db/km at 780 nm to 120 db/km at 1300 nm.					
IT	37626-13-4P, Perfluoro(2,2-dimethyl-1,3-dioxole-tetrafluoroethylene copolymer RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); PREP (Preparation); USES (Uses) (plastic optical materials with refractive index gradient)					
RN	37626-13-4 HCAPLUS					

CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with
1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



IC ICM G02B001-04

CC 37-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 38

IT 37636-13-4P, Perfluoro(2,2-dimethyl-1,3-dioxole-
tetrafluoroethylene copolymer 152151-31-0P, Poly[perfluoro(butenyl
vinyl ether)] 200262-18-6P, Perfluoro(butenyl vinyl
ether)-perfluoro(2,2-dimethyl-1,3-dioxole copolymer
RL: DEV (Device component use); IMF (Industrial manufacture); POF
(Polymer in formulation); PRP (Properties); PREP (Preparation); USES
(Uses)
(plastic optical materials with refractive index gradient)

L19 ANSWER 18 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:133844 HCAPLUS Full-text

DOCUMENT NUMBER: 130:268162

TITLE: Condensation Coefficients of Ag on Polymers

AUTHOR(S): Thran, A.; Kiene, M.; Zaporjtschenko, V.;

Faupel, F.

CORPORATE SOURCE: Technische Fakultat, Universitat Kiel, Kiel,

24143, Germany

SOURCE: Physical Review Letters (1999), 82(9),

1903-1906

CODEN: PRLTAQ; ISSN: 0031-9007

PUBLISHER: American Physical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Using a novel very sensitive radiotracer technique, we have measured the
condensation coefficient (C) of Ag on several polymers. The value of C shows
an extreme variation ranging from close to unity for polyimide to values as
low as 0.002 for Teflon AFTM at room temperature. The value C decreases
strongly at elevated temps. and exhibits a drop somewhere below the bulk glass

transition temperature The observed angular distribution of reemitted atoms does not depend on the angle of incidence and has a $\cos\theta$ form. This, among other arguments, suggests them to be adsorbed at the surface prior to reemission. Nucleation, studied on a polycarbonate, turned out to take place at preferred sites.

IT 37626-13-4, Teflon AF 1601

RL: PEP (Physical, engineering or chemical process); PROC (Process)
(determination of condensation coeffs. of silver on polymers by
radiotracer technique)

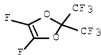
RN 37626-13-4 HCAPLUS

CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with
1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



CC 38-2 (Plastics Fabrication and Uses)

IT 7440-22-4, Silver, processes 9043-05-4,

4,4'-Oxydianiline-pyromellitic dianhydride copolymer, sru

25038-81-7, Pyralin PI 2545 37626-13-4, Teflon AF 1601

129510-27-6, Carbonic acid-4,4'-(3,3,5-

trimethylcyclohexylidene)bisphenol copolymer, sru 138005-52-4,
Carbonic acid-4,4'-(3,3,5-trimethylcyclohexylidene)bisphenol
copolymer

RL: PEP (Physical, engineering or chemical process); PROC (Process)
(determination of condensation coeffs. of silver on polymers by
radiotracer technique)

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L19 ANSWER 19 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:44059 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 130:154061

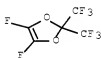
TITLE: The radiation chemistry of the copolymer of
tetrafluoroethylene with
2,2-bis(trifluoromethyl)-4,5-difluoro-1,3-dioxol

AUTHOR(S): Forsythe, John S.; Hill, David J. T.;
 Logothetis, Anestis L.; Whittaker, Andrew K.
 CORPORATE SOURCE: Polymer Mater. Radiation Group, Univ.
 Queensland, St. Lucia, 4072, Australia
 SOURCE: Polymer Degradation and Stability (1998
), Volume Date 1999, 63(1), 95-101
 CODEN: PDSTDW; ISSN: 0141-3910
 PUBLISHER: Elsevier Science Ltd.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB The radiation chemical of the tetrafluoroethylene-2,2- bis(trifluoromethyl)-
 4,5-difluoro-1,3-dioxole copolymer (Teflon AF) was investigated using γ -
 irradiation under vacuum. Two types of resin were studied which differed in
 dioxole content (AF1600 65 mol% dioxole and AF2400 87 mol% dioxole). The
 fluoropolymer was found to undergo predominant main chain scission upon
 radiolysis, both above and below the glass transition temperature, which was
 characterized by a decrease in the glass transition temperature FTIR anal.
 showed the formation of new carboxylate end groups as well as terminal unsatn.
 Both CF- and CF₂- radicals were identified using ESR upon γ -radiolysis and
 subsequent thermal annealing. The G-value for radical production at 77 K was
 1.6 for both resins.
 IT 37626-13-4, Teflon AF
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (radiochem. degradation of)
 RN 37626-13-4 HCAPLUS
 CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with
 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



CC 35-8 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 37
 IT ESR (electron spin resonance)
 Glass transition temperature
 (of Teflon AF; gamma irradiation effect on)

IT 37626-13-4, Teflon AF

RL: PEP (Physical, engineering or chemical process); PROC (Process)
(radiochem. degradation of)REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L19 ANSWER 20 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1998:268401 HCAPLUS Full-text

DOCUMENT NUMBER: 128:310047

ORIGINAL REFERENCE NO.: 128:61429a,61432a

TITLE: Method of gasifying or degasifying liquid

INVENTOR(S): Nemser, Stuart; Olpin, Jay

PATENT ASSIGNEE(S): Compact Membrane Systems, Inc., USA

SOURCE: PCT Int. Appl., 42 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9817362	A1	19980430	WO 1997-US18869	19971023
<--				
W: AU, CA, JP				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5876604	A	19990302	US 1996-735922	19961024
<--				
AU 9850828	A	19980515	AU 1998-50828	19971023
<--				
EP 946233	A1	19991006	EP 1997-913701	19971023
<--				
EP 946233	B1	20050223		
R: DE, DK, FR, GB, IT, NL, IE				
JP 2000509329	T	20000725	JP 1998-519531	19971023
<--				
JP 3442791	B2	20030902		
CA 2268641	C	20010130	CA 1997-2268641	19971023
<--				
JP 2002355534	A	20021210	JP 2002-120204	19971023
<--				
US 5902747	A	19990511	US 1998-138082	199808

21

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PRIORITY APPLN. INFO.: US 1996-735922 A 199610
24

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JP 1998-519531 A3 199710
23

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WO 1997-US18869 W 199710
23

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AB A method of adding or removing a gas to or from a solution of the gas in a liquid involves transferring the gas between the liquid and another fluid through a membrane unit, which includes a membrane, which is substantially impermeable to the solvent and has a permeability to O of ≥ 100 barrers, is formed from an amorphous copolymer of perfluoro-2,2-dimethyl-1,3-dioxole, and is maintained at a temperature below the glass-transition temperature of the copolymer. The fluid can be another liquid or a gas. The novel method provides very high rates of gas transmission between liqs. and permits gasifying liqs. without resort to sparging bubbles through the liquid. The method thus can gasify liquid with superior efficiency and without excessive agitation due to bubbling. These features result in economy of gas consumption and decreased need for gas recovery equipment, and when used in connection with a toxic or organic gaseous component, decreased requirements for addnl. pollution control equipment. The membrane material is resistant to fouling by liqs., and especially, by bioreactor mass. Hence, the novel method can remain in service for long duration without substantially diminished performance. Utilities for the novel method include purifying drinking H2O through ozonolysis, oxygenating bioreactors and blood; oxidizing volatile organic compds. in H2O; adding gaseous reactants to liquid chemical reactions and supplying O to and removing volatile pollutants from wastewater.

IT 37626-13-4, Perfluoro-2,2-dimethyl-1,3-dioxole-tetrafluoroethylene copolymer
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(membranes in units for gasifying or degasifying liquid)

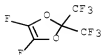
RN 37626-13-4 HCAPLUS

CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



IC ICM B01D011-00
ICS B01D011-02; B01D019-00; A01N001-02; C12N001-00; C12N005-00;
C12N005-08
CC 48-1 (Unit Operations and Processes)
Section cross-reference(s): 38, 61, 63
IT 37626-13-4, Perfluoro-2,2-dimethyl-1,3-dioxole-
tetrafluoroethylene copolymer
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(membranes in units for gasifying or degasifying liquid)
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN
THE RE FORMAT

L19 ANSWER 21 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1998:220954 HCAPLUS Full-text
DOCUMENT NUMBER: 128:283421
ORIGINAL REFERENCE NO.: 128:56099a,56102a
TITLE: Production of fluoropolymer-based porous
dielectric layers
INVENTOR(S): Hasegawa, Toshiaki
PATENT ASSIGNEE(S): Sony Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10092804	A	19980410	JP 1996-247556	19960919
<--				
PRIORITY APPLN. INFO.:			JP 1996-247556	19960919
<--				

AB The title layers, useful for semiconductor devices, are prepared by forming a fluoropolymer solution layer (e.g., of Teflon AF) on a base sheet (e.g., printed circuit boards), then heat treating at a temperature between the glass transition temperature and the decomposition temperature of the fluoropolymer and at a pressure lower than the saturated vapor pressure of the solvent.

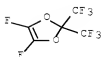
IT 37626-13-4, Teflon AF
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(dielec. layers; production of fluoropolymer-based porous dielec. layers)
RN 37626-13-4 HCAPLUS
CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with

1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



IC ICM H01L021-312

ICS H01L021-316; H01L021-768

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 76

IT 37626-13-4, Teflon AF 177073-08-4, Flare 1.51

RL: PEP (Physical, engineering or chemical process); PRP

(Properties); TEM (Technical or engineered material use); PROC

(Process); USES (Uses)

(dielec. layers; production of fluoropolymer-based porous dielec. layers)

L19 ANSWER 22 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1998:184394 HCAPLUS Full-text

DOCUMENT NUMBER: 128:231389

ORIGINAL REFERENCE NO.: 128:45817a, 45820a

TITLE: Polycarbonate compositions having high
Tg, excellent transparency, heat
stability, and moldability and optical fibers
thereofINVENTOR(S): Nishiguchi, Masaki; Tokuda, Toshimasa; Shuto,
HiroshiPATENT ASSIGNEE(S): Furukawa Electric Co., Ltd., Japan; Teijin
Chemicals Ltd.

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 10077400

A

19980324

JP 1996-230300

199608
30

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PRIORITY APPLN. INFO.:

JP 1996-230300

199608
30

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AB The optical fibers have cores comprising the compns. containing (A) 100 parts polycarbonates showing sp. viscosity [polymer 0.7 g/100 mL methylene chloride (I), at 20°] and prepared by reacting carbonate precursors with dihydric phenols containing 50-99 mol% 2,2-bis(4-hydroxyphenyl)-1,1,1,3,3,3-hexafluoropropane and 1-50 mol% octafluorobiphenol and (B) 0.0001-1.0 part phosphite-type antioxidants. Thus, 39.6 parts bisphenol AF and 3.8 parts octafluoro-4,4'-biphenol were copolymd. with COC12 at 20° in I in the presence of hydrosulfite, p-tert-butylphenol, and Et3N to give a copolymer, 100 parts of which was mixed with 0.03 part tris(2,4-di-tert-butylphenyl)phosphite to give a composition showing sp. viscosity 0.175, Tg 160°, and light transmittance (600 nm, I solution) after heating in 330° for 4 h 78%. The composition was filtered and spun with Teflon AF 1600 to give an optical fiber showing transmission loss (940 nm LED) 0.36 dB/m and 0.83 dB/m at 780 nm and 940 nm, resp.

IT 37626-13-4, Teflon AF 1600

RL: DEV (Device component use); USES (Uses)

(outer layer; polycarbonate compns. having high Tg, excellent transparency, heat stability, and moldability for optical fibers)

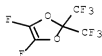
RN 37626-13-4 HCAPLUS

CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



IC ICM C08L069-00

ICS C08K005-524; C08K005-5333; G02B006-00; G02B006-12

- CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 37, 73
- IT Antioxidants
(alkylphenyl phosphites; polycarbonate compns. having high Tg, excellent transparency, heat stability, and moldability for optical fibers)
- IT Phosphites
RL: MOA (Modifier or additive use); USES (Uses)
(alkylphenyl, antioxidant; polycarbonate compns. having high Tg, excellent transparency, heat stability, and moldability for optical fibers)
- IT Fluoropolymers, uses
RL: DEV (Device component use); USES (Uses)
(outer layer; polycarbonate compns. having high Tg, excellent transparency, heat stability, and moldability for optical fibers)
- IT Heat-resistant materials
Transparent materials
(polycarbonate compns. having high Tg, excellent transparency, heat stability, and moldability for optical fibers)
- IT Polycarbonates, uses
RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); PREP (Preparation); USES (Uses)
(polycarbonate compns. having high Tg, excellent transparency, heat stability, and moldability for optical fibers)
- IT 26523-78-4, Tris(nonylphenyl) phosphite 31570-04-4,
Tris(2,4-di-tert-butylphenyl)phosphite 38613-77-3
RL: MOA (Modifier or additive use); USES (Uses)
(antioxidant; polycarbonate compns. having high Tg, excellent transparency, heat stability, and moldability for optical fibers)
- IT 37626-13-4, Teflon AF 1600
RL: DEV (Device component use); USES (Uses)
(outer layer; polycarbonate compns. having high Tg, excellent transparency, heat stability, and moldability for optical fibers)
- IT 204578-61-0P
RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); PREP (Preparation); USES (Uses)
(polycarbonate compns. having high Tg, excellent transparency, heat stability, and moldability for optical fibers)

L19 ANSWER 23 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1998:106163 HCAPLUS Full-text
DOCUMENT NUMBER: 128:160819
ORIGINAL REFERENCE NO.: 128:31533a,31536a
TITLE: Optical fibers with inner- and outer cores
having wide transmission regions
INVENTOR(S): Koike, Yasuhiro
PATENT ASSIGNEE(S): Koike, Yasuhiro, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.

KIND DATE

APPLICATION NO.

DATE

JP 10039156

A

19980213

JP 1996-190643

199607
19

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PRIORITY APPLN. INFO.:

JP 1996-190643

199607
19

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AB The fibers, showing excellent bending-, heat-, chemical-, moisture-, and fire resistance, comprise inner- and outer cores (I, II) and claddings (III) satisfying $n_I \neq n_{II}$ and $n_{II} > n_{III}$ (n_I - n_{III} = refractive index of I-III, resp.), where ≥ 1 of I-III comprise noncryst. fluoropolymers (preferably including cyclic structures in main chains). Thus, 35 g perfluoro(butenyl vinyl ether) (I) was polymerized at 40° in the presence of 1,1,2-trichlorotrifluoroethane and peroxides to give a polymer A showing number-average mol. weight (Mn) 1.5 + 105, intrinsic viscosity [in perfluoro(2-butyltetrahydrofuran) at 30°] 0.50, T_g 108°, and n_D 1.34, while 8:2 (%) I-perfluoro(2,2-dimethyl-1,3-dioxole) (II) copolymer (B; Mn 2 + 105, n_D 1.32) and 2:8 (%) I-II copolymer (C; Mn 3 + 105, n_D 1.29) were obtained sep. Then, the polymer A-C were melt spun in the usual way to give a fiber with inner core of A, outer core of C, and cladding of B showing light transmission characteristics 600 dB/km (650 nm) and 200 dB/km (1300 nm).

IT 118769-43-0P

RL: DEV (Device component use); PNU (Preparation, unclassified);

PREP (Preparation); USES (Uses)

(fiber; fluoropolymer-containing optical fibers with inner- and outer cores having wide transmission regions)

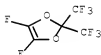
RN 118769-43-0 HCAPLUS

CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1-chloro-1,2,2-trifluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 79-38-9

CMF C2 C1 F3



IC ICM G02B006-22

ICS C08L029-10; G02B006-00
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 40
 IT 101182-89-2P, Perfluoro(butenyl vinyl ether) homopolymer
 113769-43-6P 200262-18-6P, Perfluoro(butenyl vinyl ether)-perfluoro(2,2-dimethyl-1,3-dioxole) copolymer
 RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
 (fiber; fluoropolymer-containing optical fibers with inner- and outer cores having wide transmission regions)

L19 ANSWER 24 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1997:784310 HCAPLUS Full-text
 DOCUMENT NUMBER: 128:62626
 ORIGINAL REFERENCE NO.: 128:12251a,12254a
 TITLE: Fluorine-containing optical plastic materials with low loss for optical fibers
 INVENTOR(S): Sugiyama, Tokuhide; Murofushi, Hidenobu; Naritomi, Masaki
 PATENT ASSIGNEE(S): Asahi Glass Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09316265	A	19971209	JP 1996-135521	19960529

PRIORITY APPLN. INFO.: JP 1996-135521
 19960529

AB The materials, showing excellent heat-, chemical-, and moisture resistance, are obtained by irradiation of molten fluoropolymers with radiation beam. The irradiation may be performed in O-free atmospheric. Thus, 35 g perfluoro(butenyl vinyl ether) was suspension-polymerized at 40° in H₂O in the presence of (Me₂CHOC(=O)₂)₂ to give a polymer of number-average mol. weight 1.5 + 105, refractive index 1.34, glass transition temperature 108°, and intrinsic viscosity [in (perfluoro)2-butyltetrahydrofuran, 30°] 0.50. Then, the polymer was blended with 15% chlorotrifluoroethylene oligomer in molten state and extruded to give a sheet, which was irradiated with electron beam at 50 kGy to give the claimed material showing scattering loss (at 633 nm wavelength) 152 dB/km.

IT 37626-13-4P, Perfluoro(2,2-dimethyl-1,3-dioxole)-tetrafluoroethylene copolymer
 RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); PREP (Preparation); USES (Uses)

(radiation-beam-irradiated fluoropolymer-based optical materials with low loss)

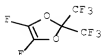
RN 37626-13-4 HCAPLUS

CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



IC ICM C08L027-12

ICS G02B001-04; G02B006-00

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 73

IT 26425-79-6P, Perfluoro(methyl vinyl ether)-tetrafluoroethylene copolymer 37626-13-4P, Perfluoro(2,2-dimethyl-1,3-dioxole)-tetrafluoroethylene copolymer 152151-31-0P, Poly[perfluoro(butenyl vinyl ether)] 186825-54-7P, Chlorotrifluoroethylene-perfluoro(butenyl vinyl ether) copolymer 200262-18-6P, Perfluoro(butenyl vinyl ether)-perfluoro(2,2-dimethyl-1,3-dioxole) copolymer 200262-19-7P
RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); PREP (Preparation); USES (Uses)
(radiation-beam-irradiated fluoropolymer-based optical materials with low loss)

L19 ANSWER 25 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1997:513609 HCAPLUS Full-text

DOCUMENT NUMBER: 127:179968

ORIGINAL REFERENCE NO.: 127:34811a,34814a

TITLE: Porous glass coated with an organic polymer and a method for coating porous glass with an organic polymer

INVENTOR(S): Takahashi, Tatsuhiro

PATENT ASSIGNEE(S): E. I. Du Pont de Nemours & Co., USA; Takahashi, Tatsuhiro

SOURCE: PCT Int. Appl., 11 pp.

CODEN: PIXXD2

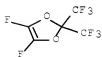
DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 9727150	A1	19970731	WO 1997-US1596	19970123
<p>W: AL, AM, AU, AZ, BA, BB, BG, BR, BY, CA, CN, CU, CZ, EE, GE, HU, IL, IS, KG, KP, KR, KZ, LC, LK, LR, LT, LV, MD, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, TJ, TM, TR, TT, UA, US, UZ, VN</p> <p>RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG</p>				
JP 09208265	A	19970812	JP 1996-13124	19960129
AU 9722528	A	19970820	AU 1997-22528	19970123
<p>PRIORITY APPLN. INFO.:</p> <p>JP 1996-13124 A 19960129</p> <p>WO 1997-US1596 W 19970123</p>				
<p>AB The coated porous glass is manufactured by coating the porous glass with a solution of the organic polymer in a suitable solvent, and heat-treating the coated side of the porous glass at a temperature equal to or higher than the m.p. or glass transition temp. of the organic polymer. The organic polymer has excellent adhesion and peeling resistance. The polymer is a fluoropolymer and the solvent may be a fluorinated solvent.</p>				
<p>IT 37626-13-4, Teflon AF1600</p> <p>RL: TEM (Technical or engineered material use); USES (Uses) (dip coating process for coating porous glass with)</p>				
<p>RN 37626-13-4 HCAPLUS</p>				
<p>CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)</p>				
<p>CM 1</p> <p>CRN 37697-64-6</p> <p>CMF C5 F8 O2</p>				



CRN 116-14-3
CMF C2 F4



IC ICM C03C017-32
CC 57-1 (Ceramics)
IT 25067-11-2 25190-89-0D, rubber 37626-13-4, Teflon AF1600
RL: TEM (Technical or engineered material use); USES (Uses)
(dip coating process for coating porous glass with)

L19 ANSWER 26 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1997:513608 HCAPLUS Full-text

DOCUMENT NUMBER: 127:179967

ORIGINAL REFERENCE NO.: 127:34811a, 34814a

TITLE: Compositions comprising a porous glass surface coated with an organic polymer, and process for obtaining the compositions

INVENTOR(S): Takahashi, Tatsuhiro

PATENT ASSIGNEE(S): E. I. Du Pont de Nemours & Co., USA; Takahashi, Tatsuhiro

SOURCE: PCT Int. Appl., 15 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9727149	A1	19970731	WO 1997-US1502	19970123
<--				
W: AL, AM, AU, AZ, BA, BB, BG, BR, BY, CA, CN, CU, CZ, EE, GE, HU, IL, IS, KG, KP, KR, KZ, LC, LK, LR, LT, LV, MD, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, TJ, TM, TR, TT, UA, US, UZ, VN RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
JP 09208266	A	19970812	JP 1996-13125	19960129
<--				
AU 9718480	A	19970820	AU 1997-18480	19970123
<--				
PRIORITY APPLN. INFO.:			JP 1996-13125	A 19960129
<--				
			WO 1997-US1502	W 199701

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AB The porous layer on the glass surface is coated with a fluoropolymer. The compns. are manufactured by providing a porous layer on ≥ 1 sides of the glass, coating the porous layer with a solution of an organic polymer in a solvent capable of dissolving the polymer, and heat-treating the coated layer at a temperature not lower than the m.p. or the glass transition temperature of the polymer. A suitable polymer is a hexafluoropropene-tetrafluoroethene copolymer in Fluorinate FC-75 (F-based solvent).

IT 37626-13-4, Teflon AF1600
RL: TEM (Technical or engineered material use); USES (Uses)
(dip coating process for coating porous glass with)

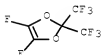
RN 37626-13-4 HCAPLUS

CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



IC ICM C03C017-32
ICS C03C017-42

CC 57-1 (Ceramics)

IT 25067-11-2, Hexafluoropropene-tetrafluoroethene copolymer
25190-89-0D, Hexafluoropropene-tetrafluoroethene-vinylidene fluoride copolymer, rubber 37626-13-4, Teflon AF1600
RL: TEM (Technical or engineered material use); USES (Uses)
(dip coating process for coating porous glass with)

L19 ANSWER 27 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1997:46 HCAPLUS Full-text

DOCUMENT NUMBER: 126:67536

ORIGINAL REFERENCE NO.: 126:12985a,12988a

TITLE: Ink-jet printing head and coating of water-repelling thermoplastic resin layer

INVENTOR(S): Sato, Motoaki; Mashio, Hideaki; Togano, Shigeo

PATENT ASSIGNEE(S): Canon Kk, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

DOCUMENT TYPE: CODEN: JKXXAF
 LANGUAGE: Patent
 FAMILY ACC. NUM. COUNT: 1 Japanese
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08244234	A	19960924	JP 1995-55747	19950315

PRIORITY APPLN. INFO.: JP 1995-55747 <--
 19950315

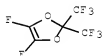
AB The ink-jet printing head is characterized by an ink ejection port and its periphery coated with an amorphous thermoplastic resin having a perfluoroheterocyclic structure and having a silane coupling agent at the terminal. The coating of the amorphous thermoplastic resin is carried out using a casting, dipping, or transfer method. After the coating process is done, the ink-jet printing head is heated at a temperature below the glass transition temperature of the resin (20-80°) and below the thermal deformation temperature of the substrate to vaporize solvents and simultaneously heat-treat the silane coupling agent to increase adhesivity of the resin with the substrate. This resin layer provides semi-permanent water-repelling property.

IT 37626-13-4, Teflon AF
 RL: TEM (Technical or engineered material use); USES (Uses)
 (ink-jet printing head and coating of water-repelling thermoplastic resin layer)

RN 37626-13-4 HCAPLUS
 CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6
 CMF C5 F8 O2



CM 2

CRN 116-14-3
 CMF C2 F4



IC ICM B41J002-135
ICS C03C017-30
CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 42
IT 37626-13-4, Teflon AF 159250-70-1, Cytop CTL-807M
167290-56-4, Cytop CTX 805A
RL: TEM (Technical or engineered material use); USES (Uses)
(ink-jet printing head and coating of water-repelling thermoplastic resin layer)

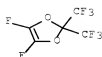
L19 ANSWER 28 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1996:400489 HCAPLUS Full-text
DOCUMENT NUMBER: 125:71899
ORIGINAL REFERENCE NO.: 125:13469a,13472a
TITLE: Pellicle and its manufacture
INVENTOR(S): Hamada, Juichi; Kawakami, Satoshi; Shirasaki, Susumu; Nagata, Akihiko; Kashida, Shu; Kubota, Yoshihiro
PATENT ASSIGNEE(S): Shinetsu Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08069103	A	19960312	JP 1995-103536	19950427
JP 3429897	B2	20030728		
PRIORITY APPLN. INFO.:			JP 1995-103536	A 19950427
			JP 1994-143286	19940624

AB The title method involves the steps of applying an adhesive whose structure is similar to that of a pellicle film on a pellicle frame, laminating with a polymer pellicle film containing the solvent used in formation of the pellicle film, and heating at a lower temperature than glass transition temperature of the polymer. The pellicle is also claimed. The pellicle is useful for manufacture of semiconductor devices or liquid-crystal display devices. The pellicle shows good interlayer adhesion.

IT 37626-13-4, Teflon AF 1600
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(pellicle and bonding in its manufacture for good interlayer adhesion)
RN 37626-13-4 HCAPLUS
CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CRN 37697-64-6
CMF C5 F8 O2



CM 2
CRN 116-14-3
CMF C2 F4



IC ICM G03F001-14
ICS H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, 76
IT 7429-90-5, Aluminum, processes 37626-13-4, Teflon AF 1600
158707-34-7, Perfluoro(butenyl vinyl ether) homopolymer
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(pellicle and bonding in its manufacture for good interlayer adhesion)

L19 ANSWER 29 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1995:874080 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 123:258331

ORIGINAL REFERENCE NO.: 123:46201a,46204a

TITLE: New industrial fluoropolymer science and technology

AUTHOR(S): Smart, Bruce E.; Feiring, Andrew E.; Krespan, Carl G.; Yang, Zhen-Yu; Hung, Ming-H.; Resnick, Paul R.; Dolbier, William R., Jr.; Rong, Xiao X.
CORPORATE SOURCE: DuPont Central Research & Development and DuPont Fluoroproducts, Experimental Station, Wilmington, DE, 19880-0328, USA

SOURCE: Macromolecular Symposia (1995), 98(35th IUPAC International Symposium on Macromolecules, 1995), 753-67
CODEN: MSYMEC; ISSN: 1022-1360

PUBLISHER: Huethig & Wepf

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

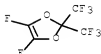
AB A review with 23 refs. Teflon AF, a family of copolymers of perfluoro-2,2-dimethyldioxole with tetrafluoroethylene, and Cytop, a ring-cyclized homopolymer of CF2:CFO(CF2)2CF:CF2 are the first com. amorphous perfluoroplastics which combine high optical clarity and solubility with outstanding chemical, thermal and elec. properties. The processes for making

these materials are described and recent structure-property studies that reveal dramatic substituent effects on polymer T_g and related properties are reviewed. The results of some initial fundamental kinetic studies on fluorinated free-radical cyclizations that relate to efficient cyclopolymerization of fluorinated dienes and the design of new ring-containing fluoroplastics are discussed.

IT 37626-13-4, Teflon AF
RL: MSC (Miscellaneous)
(new industrial fluoropolymer science and technol.)
RN 37626-13-4 HCAPLUS
CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with
1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6
CMF C5 F8 O2



CM 2

CRN 116-14-3
CMF C2 F4



CC 37-0 (Plastics Manufacture and Processing)
Section cross-reference(s): 38
IT 37626-13-4, Teflon AF 64080-44-0, Cytop
RL: MSC (Miscellaneous)
(new industrial fluoropolymer science and technol.)

L19 ANSWER 30 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1995:785452 HCAPLUS [Full-text](#)
DOCUMENT NUMBER: 123:213253
ORIGINAL REFERENCE NO.: 123:37725a,37728a
TITLE: Polymer pellicle for lithography
INVENTOR(S): Hamada, Juichi; Kawakami, Satoshi; Shirasaki,
Susumu; Nagata, Akihiko; Kashida, Shu; Kubota,
Yoshihiro
PATENT ASSIGNEE(S): Shinetsu Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 07168345	A	19950704	JP 1993-311913	19931213
JP 3089153	B2	20000918	<--	
PRIORITY APPLN. INFO.:			JP 1993-311913	19931213

AB The pellicle is fixed to a pellicle frame with a polymer adhesive that shows glass transition temperature lower than that of the pellicle. The pellicle and the adhesive may be made of an amorphous fluoropolymer. The pellicle is free from creases and distortion.

IT 37626-13-4, Teflon AF 1600
 RL: DEV (Device component use); USES (Uses)
 (pellicle from; pellicles fixed on frame with adhesive showing lower glass transition temperature than that of the pellicle for prevention of creases and distortion)

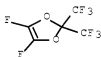
RN 37626-13-4 HCAPLUS

CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



IC ICM G03F001-14
 ICS C09J127-12; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 38, 73

IT Adhesives
 (pellicles fixed on frame with adhesive showing lower glass transition temperature than that of

- the pellicle for prevention of creases and distortion)
- IT Fluoropolymers
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
 (pellicles fixed on frame with adhesive showing lower glass transition temperature than that of the pellicle for prevention of creases and distortion)
- IT Lithography
 (pellicles for; pellicles fixed on frame with adhesive showing lower glass transition temperature than that of the pellicle for prevention of creases and distortion)
- IT 9004-35-7, Cellulose acetate 9004-57-3, Ethyl cellulose 158707-33-6, Cytos CTXA
 RL: DEV (Device component use); USES (Uses)
 (adhesive; pellicles fixed on frame with adhesive showing lower glass transition temperature than that of the pellicle for prevention of creases and distortion)
- IT 9004-48-2, Cellulose propionate 37626-13-4, Teflon AF 1600 158707-34-7, Cytos CTXS
 RL: DEV (Device component use); USES (Uses)
 (pellicle from; pellicles fixed on frame with adhesive showing lower glass transition temperature than that of the pellicle for prevention of creases and distortion)

L19 ANSWER 31 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1994:485914 HCAPLUS Full-text

DOCUMENT NUMBER: 121:85914

ORIGINAL REFERENCE NO.: 121:15423a,15426a

TITLE: Fluoropolymer-coated vehicles

INVENTOR(S): Ishida, Tooru; Unoki, Masao

PATENT ASSIGNEE(S): Asahi Glass Co Ltd, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06039350	A	19940215	JP 1992-218187	19920724
<--				
PRIORITY APPLN. INFO.:			JP 1992-218187	19920724
<--				

- AB The vehicles with good staining resistance and water repellency is coated with amorphous F-containing polymers as the topcoats. Thus, an aqueous mixture containing perfluorobutyl vinyl ether 35, R 113 5, and (Me₂CHOCO₂)₂ 0.09 g was heated at 40° for 22 h to give 28 g polymer (glass transition temperature 110°, 10%-weight-loss temperature 465°, light transmittance ≥95%), which was dissolved in perfluoro(2-butyltetrahydrofuran) and applied on an acrylic polymer-precoated steel plate to form a coating showing H₂O contact angle 109°.
- IT 37626-13-4P, Perfluoro-2,2-dimethyl-1,3-dioxole-tetrafluoroethylene copolymer
 RL: TEM (Technical or engineered material use); PREP (Preparation);

USES (Uses)

(coatings, preparation of, water-repellent, for automobiles)

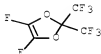
RN 37626-13-4 HCAPLUS

CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with
1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



IC ICM B05D007-24

ICS B05D005-00; B05D007-14

CC 42-10 (Coatings, Inks, and Related Products)

Section cross-reference(s): 55

IT 37626-13-4P, Perfluoro-2,2-dimethyl-1,3-dioxole-

tetrafluoroethylene copolymer 139570-53-9P

RL: TEM (Technical or engineered material use); PREP (Preparation);

USES (Uses)

(coatings, preparation of, water-repellent, for automobiles)

L19 ANSWER 32 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1994:149055 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 120:149055

ORIGINAL REFERENCE NO.: 120:26025a, 26028a

TITLE: Electrostatic information recording medium
having excellent charge-retaining
characteristics and heat-resistant properties

INVENTOR(S): Iijima, Masayuki

PATENT ASSIGNEE(S): Dai Nippon Printing Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 4

PATENT INFORMATION:

PATENT NO.

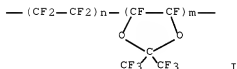
KIND

DATE

APPLICATION NO.

DATE

 JP 05107775 A 19930430 JP 1991-267505 199110
 16
 <--
 JP 3170001 B2 20010528
 WO 2004088430 A1 20041014 WO 1992-JP1336 199210
 15
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 W: US
 PRIORITY APPLN. INFO.: JP 1991-267505 A 199110
 16
 <--
 JP 1991-269427 A 199110
 17
 <--
 JP 1991-269428 A 199110
 17
 <--
 JP 1991-295529 A 199111
 12
 <--
 GI



AB In an electrostatic information recording medium having a charge-retaining layer laminated at least on an electrode layer, the charge-retaining layer comprises a F-containing thermoplastic resin, which is made up of a repeating unit I (dioxonol content 20-90 mol%) and has a melt viscosity 10-10,000 Pa·s at a temperature 90-110° higher than its glass transition temperature

IT 37626-13-4, Teflon AF1600
 RL: USES (Uses)
 (electrostatic information recording medium containing)

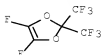
RN 37626-13-4 HCAPLUS

CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



IC ICM G03G005-02

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)

IT 37626-13-4, Teflon AF1600

RL: USES (Uses)

(electrostatic information recording medium containing)

L19 ANSWER 33 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1993:541366 HCAPLUS Full-text

DOCUMENT NUMBER: 119:141366

ORIGINAL REFERENCE NO.: 119:25345a,25348a

TITLE: Cellular plastic-insulated electric wires

INVENTOR(S): Seki, Ikuo; Yagyu, Hideki

PATENT ASSIGNEE(S): Hitachi Cable, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 05144325	A	19930611	JP 1991-327056	

199111
15

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PRIORITY APPLN. INFO.: JP 1991-327056

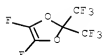
199111
15

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AB In title wires, useful for high-speed signal transmission, composed of core conductors coated with polymer under layers and cellular polymer top layers, mixts. of amorphous fluoropolymers [glass transition temperature (T_g) 80-300°] and tetrafluoroethylene (I)-perfluoroalkyl vinyl ether copolymers and/or I-hexafluoropropylene copolymer (II) are used as the under layers and I-perfluoroalkyl vinyl ether copolymers and/or II are used as the top layers. Thus, a Ag-clad Cu wire coated with a 1:5 Teflon AF 1600 (T_g 160°)-II mixture

as the under layer and expanded 1-perfluoroalkyl vinyl ether as the top layer showed transmission delay time 3.6 ns/m.

IT 37626-13-4, Teflon AF 1600
RL: TEM (Technical or engineered material use); USES (Uses)
(coatings, elec. insulating, on wires, middle, with cellular
fluoropolymer tops)
RN 37626-13-4 HCAPLUS
CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with
1,1,2,2-tetrafluoroethene (CA INDEX NAME)
CM 1
CRN 37697-64-6
CMF C5 F8 O2



CM 2
CRN 116-14-3
CMF C2 F4



IC ICM H01B007-02
ICS C09D005-25; H01B003-30; H01B003-44
CC 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 76
IT 25067-11-2, FEP 37626-13-4, Teflon AF 1600
RL: TEM (Technical or engineered material use); USES (Uses)
(coatings, elec. insulating, on wires, middle, with cellular
fluoropolymer tops)

L19 ANSWER 34 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1993:498116 HCAPLUS Full-text
DOCUMENT NUMBER: 119:98116
ORIGINAL REFERENCE NO.: 119:17677a
TITLE: Fluoropolymer foam-insulated electric wires
INVENTOR(S): Seki, Ikuo; Yagyu, Hideki
PATENT ASSIGNEE(S): Hitachi Cable, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 05047221

A

19930226

JP 1991-226517

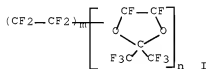
199108
12

PRIORITY APPLN. INFO.:

JP 1991-226517

199108
12

GI



AB Title wires, useful for signal transmission in electronic equipment, are coated directly or through an intermediate fusion layer with foams of a blend of hexafluoropropylene-tetrafluoroethylene copolymer (I) or perfluoroalkyl vinyl ether-tetrafluoroethylene copolymers and amorphous fluoropolymers I (m, n ≥ 0) with glass transition temperature (T_g) 80-300°. Thus, an elec. conductor with outer diameter 0.26 mm was extrusion coated with a mixture of 80% I and 20% AF 1600 (amorphous fluoropolymer) containing 0.5% BN to give a 0.2-mm covering with expansion ratio 81% using Freon 22 as blowing agent.

IT 37626-13-4

RL: USES (Uses)

(blends with tetrafluoroethylene copolymers, foams, coatings for wires)

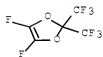
RN 37626-13-4 HCAPLUS

CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



IC ICM H01B007-02
 ICS B29C047-02; C09D127-18; C09D127-20; H01B003-44; H01B013-14
 ICA C08F214-26
 CC 42-10 (Coatings, Inks, and Related Products)
 Section cross-reference(s): 76
 IT 37626-13-4
 RL: USES (Uses)
 (blends with tetrafluoroethylene copolymers, foams, coatings for wires)

L19 ANSWER 35 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1993:103657 HCAPLUS Full-text

DOCUMENT NUMBER: 118:103657

ORIGINAL REFERENCE NO.: 118:18151a,18154a

TITLE: Transparent fluoroacrylate polymers and their preparation and use, especially as optical fibers

INVENTOR(S): Groh, Werner; Heumueller, Rudolf; Schuetze, Gerald; Stern, Roland; Wieners, Gerhard

PATENT ASSIGNEE(S): Hoechst A.-G., Germany

SOURCE: Eur. Pat. Appl., 19 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 501424	A1	19920902	EP 1992-103191	19920225
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US 5187769	A	19930216	US 1992-840324	19920224
<--				
CA 2061771	A1	19920827	CA 1992-2061771	19920225
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JP 04353506	A	19921208	JP 1992-39680	19920226
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US 5239027	A	19930824	US 1992-992082	19921217
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PRIORITY APPLN. INFO.:			DE 1991-4105951	19910226
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US 1992-840324

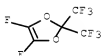
A3

199202

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- AB Transparent copolymers of (R1)2C:CFCO2CR2(CF3)2 [R1, R2 = H, D, F] 10-95, (R3)2C:CFCO2CR4R5R6 (R3 = H, D; R4, R5 = H, D, Me, CD3, etc.; R6 = Me, CF3, CF2CF3, CD3, etc.) 5-90, and (R7)2C:CFCO2C(R8)3 (R7, R8 = H, D) 0-85% are prepared. The copolymers have high glass transition temperature and are especially useful as optical fibers. A copolymer of 30% H2C:CFCO2CH(CF3)2 and 70% H2C:CFCO2CHMe2 was prepared and extruded as an optical fiber while a polymer of hexafluoroisopropyl 2,3-difluoroacrylate was extruded as a sheath for the fiber.
- IT 37626-13-4, Teflon AF 1600
RL: PRP (Properties)
(optical fiber sheath)
- RN 37626-13-4 HCAPLUS
- CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)
- CM 1
- CRN 37697-64-6
- CMF C5 F8 O2



- CM 2
- CRN 116-14-3
- CMF C2 F4



- IC ICM C08F220-24
ICS G02B001-04
- CC 37-5 (Plastics Manufacture and Processing)
Section cross-reference(s): 38, 73
- IT 26655-00-5, Perfluoro(propyl vinyl ether)-tetrafluoroethylene copolymer 37626-13-4, Teflon AF 1600 132433-82-0
146056-79-3
RL: PRP (Properties)
(optical fiber sheath)
- L19 ANSWER 36 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
- ACCESSION NUMBER: 1992:428417 HCAPLUS [Full-text](#)
- DOCUMENT NUMBER: 117:28417
- ORIGINAL REFERENCE NO.: 117:5131a,5134a
- TITLE: Foamed plastic electric insulators for wires

October 27, 2008

10/552,684

57

INVENTOR(S): Seki, Ikuo; Yagyu, Hideki; Shimizu, Masazumi;
 Seya, Osamu; Kuroda, Saneshiro
 PATENT ASSIGNEE(S): Hitachi Densen K. K., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04048510	A	19920218	JP 1990-156995	19900615
				<--
PRIORITY APPLN. INFO.:				JP 1990-156995
				19900615
				<--

AB Wires are covered with amorphous fluoropolymers with glass transition temperature (Tg) 80-300°, and plastic foams as inner, and outer layer, resp. Thus, Ag-plated Cu wires were extruded with Teflon AF 1600 (Tg 160°) and 5:95 perfluoroalkyl vinyl ether-tetrafluoroethylene copolymer foams to give wires with good interlayer adhesion.

IT 37626-13-4, Teflon AF 1600
 RL: USES (Uses)
 (elec. insulators, for wires)

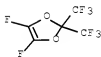
RN 37626-13-4 HCAPLUS

CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



IC ICM H01B007-02

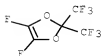
ICS B29C047-02; C09D127-18; C09D127-20; H01B003-30; H01B013-14
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 76
IT 25067-11-2, Hexafluoropropene-tetrafluoroethylene copolymer
37626-13-4, Teflon AF 1600
RL: USES (Uses)
(elec. insulators, for wires)

L19 ANSWER 37 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1992:409975 HCAPLUS Full-text
DOCUMENT NUMBER: 117:9975
ORIGINAL REFERENCE NO.: 117:1935a,1938a
TITLE: Electrically insulating foam coatings for wires
INVENTOR(S): Seki, Ikuo; Yagyu, Hideki
PATENT ASSIGNEE(S): Hitachi Densen K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 04048508	A	19920218	JP 1990-156052	199006 14
			<--	
JP 2861283	B2	19990224	JP 1990-156052	199006 14
PRIORITY APPLN. INFO.:				
				<--

AB The title coatings comprise base coats of amorphous fluoropolymers with glass temperature (T_g) 80-300° containing ≥0.2% powdered, higher-melting fluoropolymers, and cellular outer layers. Thus, an Ag-plated Cu wire was coated with Teflon AF1600 (T_g 160°) containing 10% PTFE and then with a C2F4-perfluoroalkyl vinyl ether copolymer foam, showing good interlayer adhesion.

IT 37626-13-4
RL: USES (Uses)
(elec. insulating coatings, for wires)
RN 37626-13-4 HCAPLUS
CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with
1,1,2,2-tetrafluoroethene (CA INDEX NAME)
CM 1
CRN 37697-64-6
CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



IC ICM H01B007-02

ICS H01B003-30; H01B011-00; H01B013-14

CC 42-10 (Coatings, Inks, and Related Products)

IT 37626-13-4

RL: USES (Uses)

(elec. insulating coatings, for wires)

L19 ANSWER 38 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1991:144578 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 114:144578

ORIGINAL REFERENCE NO.: 114:24543a,24546a

TITLE: The preparation and properties of a new family of amorphous fluoropolymers: Teflon AF Resnick, Paul R.

AUTHOR(S): Polym. Prod. Dep., E. I. Du Pont de Nemours and Co., Inc., Wilmington, DE, 19880-0353, USA

CORPORATE SOURCE: Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1990), 31(1), 312-13

CODEN: ACPPAY; ISSN: 0032-3934

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The Teflon AF series are copolymers of bis-2,2-trifluoromethyl-4,5-difluoro-1,3-dioxole (I) with F2C:CF2. The glass transition temperature of the copolymer is a function of the mole composition of I. Dielec. constant, refractive index, and dynamic mech. properties of the polymer are examined; processing of the polymer is also discussed. Preparation of I starting from hexafluoroacetone and ethylene oxide is outlined.

IT 37626-13-4, Teflon AF

RL: USES (Uses)

(mech., thermal, and optical properties of)

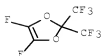
RN 37626-13-4 HCAPLUS

CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



CC 37-5 (Plastics Manufacture and Processing)
 IT 37626-13-4, Teflon AF
 RL: USES (Uses)
 (mech., thermal, and optical properties of)

L19 ANSWER 39 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1991:124110 HCAPLUS Full-text
 DOCUMENT NUMBER: 114:124110
 ORIGINAL REFERENCE NO.: 114:21145a,21148a
 TITLE: Perfluorodioxole copolymer core-shell optical
 fibers
 INVENTOR(S): Matsumoto, Tsuruyoshi; Yamamoto, Takashi;
 Sugimori, Teruhiko; Shimada, Katsuhiko
 PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan
 SOURCE: Eur. Pat. Appl., 6 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 375178	A2	19900627	EP 1989-312419	19891129
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EP 375178	A3	19910925		
EP 375178	B1	19960306		
R: DE, FR, GB, NL				
JP 02244007	A	19900928	JP 1989-291011	19891110
			<--	
JP 2640982	B2	19970813		
CA 2002846	A1	19900529	CA 1989-2002846	19891114
			<--	
CA 2002846	C	19940503		
US 4966435	A	19901030	US 1989-442714	19891129
			<--	
PRIORITY APPLN. INFO.:			JP 1988-299671	A 198811

GI



AB Fibers transmitting IR to near-IR radiation have cores from copolymers of the dioxoles I (R1, R2 = F, CF3) with glass temperature (T_g) $\geq 100^\circ$. Fibers with 4,5-difluoro-2,2-bis(trifluoromethyl)dioxole (II)-CF3OCF:CF2 copolymer (T_g 173°) as core and II-C2F4 copolymer as shell had light transmission 305, 375, and 320 dB/km at 650, 780, and 1550 nm, resp.

IT 118769-43-0

RL: USES (Uses)

(cores, for optical fibers transmitting IR and near-IR radiation)

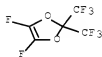
RN 118769-43-0 HCAPLUS

CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1-chloro-1,2,2-trifluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 79-38-9

CMF C2 Cl F3



IT 37626-13-4

RL: USES (Uses)

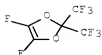
(shells, for optical fibers transmitting IR and near-IR radiation)

RN 37626-13-4 HCAPLUS

CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6
CMF C5 F8 O2



CM 2
CRN 116-14-3
CMF C2 F4



IC ICM G02B006-16
ICS G02B001-04
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 73
IT 118769-43-8 130269-17-9
RL: USES (Uses)
(cores, for optical fibers transmitting IR and near-IR radiation)
IT 37626-13-4
RL: USES (Uses)
(shells, for optical fibers transmitting IR and near-IR radiation)

L19 ANSWER 40 OF 40 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1983:423509 HCAPLUS Full-text
DOCUMENT NUMBER: 99:23509
ORIGINAL REFERENCE NO.: 99:3807a,3810a
TITLE: Amorphous copolymers of
perfluoro-2,2-dimethyl-1,3-dioxole
INVENTOR(S): Squire, Edward Noonan
PATENT ASSIGNEE(S): du Pont de Nemours, E. I., and Co. , USA
SOURCE: Eur. Pat. Appl., 16 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 4
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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EP 73087	A1	19830302	EP 1982-201044	198208 19
EP 73087	B1	19860528		

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October 27, 2008

10/552,684

63

R: DE, FR, GB, IT, NL					
JP 58038707	A	19830307	JP 1982-141790		19820817
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JP 63018964	B	19880420			
CA 1211890	A1	19860923	CA 1982-409763		19820819
			<--		
AU 8819347	A	19900105	AU 1988-19347		19880531
			<--		
AU 625553	B2	19920716			
EP 418228	A1	19910327	EP 1988-905289		19880531
			<--		
R: AT, BE, CH, DE, FR, GB, IT, LI, NL, SE					
JP 03502585	T	19910613	JP 1988-504932		19880531
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JP 2615176	B2	19970528			
EP 645406	A1	19950329	EP 1994-203365		19880531
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EP 645406	B1	20010411			
R: AT, BE, CH, DE, FR, GB, IT, LI, NL, SE					
JP 10045853	A	19980217	JP 1997-84726		19880531
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AT 200498	T	20010415	AT 1994-203365		19880531
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CA 1306827	C	19920825	CA 1988-569387		19880614
			<--		
JP 07233224	A	19950905	JP 1994-312403		19941124
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JP 11228638	A	19990824	JP 1998-299064		19981007
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JP 3137609	B2	20010226			
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			EP 1988-905289	A3	19880531
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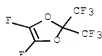
EP 1994-203365 A
198805
31
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JP 1988-504932
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31
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JP 1994-312403 A3
198805
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JP 1997-84726 A3
198805
31
<--
WO 1988-US1702 A
198805
31

<--
AB Amorphous copolymers of perfluoro-2,2-dimethyl-1,3-dioxole (I) with tetrafluoroethylene (II) and, optionally, ≥ 1 ethylenically unsatd. monomer have high glass transition temps. ($\geq 85^\circ$), low indexes of refraction, and good phys. properties which make them suitable for high-temperature high-transparency applications. Thus, a mixture of 8.2 g I and 0.006 g perfluoropropionyl peroxide in 120 g 1,1,2-trichloro-1,2,2-trifluoroethane was chilled to -50° in a shaker tube. The cold, evacuated tube was charged with 2 g II and heated at $50-55^\circ$ for 2 h. The purified polymer [37626-13-4] was dried at 110° for 16 h. The copolymer had glass transition temperature 119° , apparent melt viscosity 0.9 kPa.s at 230° , and contained 56.9 mol % I.
IT 37626-13-4P
RL: PREP (Preparation)
(preparation of, with high glass transition and transparency)
RN 37626-13-4 HCAPLUS
CN 1,3-Dioxole, 4,5-difluoro-2,2-bis(trifluoromethyl)-, polymer with 1,1,2,2-tetrafluoroethene (CA INDEX NAME)

CM 1

CRN 37697-64-6

CMF C5 F8 O2



CM 2

CRN 116-14-3

CMF C2 F4



IC C08F234-02

ICI C08F234-02, C08F214-26, C08F210-00, C08F214-18

CC 37-3 (Plastics Manufacture and Processing)

IT 116-14-3DP, polymers with perfluorodimethyldioxole and
perfluorovinyl ether 37696-13-4E 37697-64-6DP, polymers
with perfluorovinyl ether and tetrafluoroethylene 86168-65-2P
86168-66-3P 86168-67-4P 86179-27-3P 86179-28-4P 86179-29-5P
86179-31-9P

RL: PREP (Preparation)

(preparation of, with high glass transition and transparency)

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